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FINAL REGULATORY EVALUATION, FINAL REGULATORY FLEXIBILITY DETERMINATION, FINAL UNFUNDED MANDATE ASSESSMENT AND FINAL TRADE IMPACT ASSESSMENT

EMERGENCY MEDICAL EQUIPMENT FINAL RULE

(14 CFR Parts 121, and 135)

OFFICE OF AVIATION POLICY, PLANS AND MANAGEMENT ANALYSIS

AIRCRAFT REGULATORY ANALYSIS BRANCH, APO-320

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EXECUTIVE SUMMARY

This final rule requires air carriers conducting those passenger operations under 14 CFR part 121 that require the service of at least one flight attendant and which are conducted in airplanes with payloads greater than 7,500 pounds to carry automatic external defibrillators (AEDs) and to augment currently required emergency medical kits (EMKs) with additional medications and medical equipment. This rule also adds training requirements that most

significantly include initial and recurrent training of flight attendants to familiarize them with the contents of the enhanced EMKs and to instruct them in the proper use of the AEDs.

While this final rule evaluation derives directly from the NPRM evaluation, the costs estimates are lower and the benefits estimates are higher for the final rule than for the NPRM. The reasons for these differences are as follow:

The extent of voluntary compliance by affected carriers has increased since the NPRM was issued. The carriers known to have initiated voluntary compliance account for about 90% of revenue passenger miles flown by carriers subject to this final rule. Thus, this analysis applies only to those carriers not now in voluntary compliance;

The increased extent of voluntary compliance reduced the base year fleet and staff estimates for non-complying carriers from 2,600 to 1,194 airplanes, and from 54,400 to 25,500 attendants;

The final rule evaluation assumed currently non-complying carriers would take the full 36 months allowed by the rule to equip their existing airplanes and to train their existing attendants;

Review, updating and clarification of the comments to the NPRM resulted in the upward revision of the costs of some items, including training and the fully enhanced EMKs, and in its downward revision of the costs of the AEDs; and

Review of a study published in the October 26, 2000 New England Journal of Medicine resulted in revising the estimated ten-year forecasts of averted (statistical) fatalities upward from 55 to 94.8.

The FAA estimate of the total benefits remaining that are not anticipated by voluntary compliance has both qualitative and quantitative components. The quantitative component is based principally on the American Airlines study noted. Considering only those carriers not already in voluntary compliance, the FAA expects the number of fatalities averted because of this rule becoming effective will total to 95 over the ten-year period of analysis that includes 2001 through 2010.

The FAA uses $2,700,000 as the value of an averted fatality in its benefit-cost analyses. Based on this value, the FAA estimates the present value of the total quantifiable safety benefits over the period of analysis to be about $176.8 million dollars. Viewed over ten years, this value converts to uniform annual benefits of about $25.2 million dollars.

Incidental to their use in defibrillation, AEDs detect and provide electrocardiographic parameters (EKGs) of passenger/patients. Properly interpreted, these EKGs possibly can rule out the necessity for diverting a flight, as otherwise might be determined prudent absent a properly interpreted EKG readout. Further, the availability on-board in the enhanced EMK of items, without the proper use of which flight diversion would be prudent, also could rule out the necessity of diverting a flight. While reducing costly flight diversions is a benefit, the FAA has not attempted to quantify this benefit.

The FAA estimates that the present value of the total costs to be incurred by those carriers that have not initiated voluntary compliance will be about $16.6 million dollars over the ten years following the effective date of this rule. Viewed over ten years, this discounted value converts to uniform annual costs of about $2.4 million dollars.

The FAA has determined this rule: (1) has benefits which do justify its costs; (2) is not a "significant regulatory action" as defined in the Executive Order, but is "significant" as defined in DOT's Regulatory Policies and Procedures; (3) will have a significant impact on a substantial number of small entities; reduces barriers to international trade; and (4) does not impose an unfunded mandate on state, local, or tribal governments, or on the private sector.

INTRODUCTION

This final rule regulatory evaluation examines the costs and benefits of requiring air carriers conducting passenger operations under 14 CFR part 121 that require the services of at least one flight attendant and are conducted in airplanes with payloads greater than 7,500 pounds to carry automatic external defibrillators (AEDs) and to augment currently required emergency medical kits (EMKs) with additional medications and medical equipment, and to augment the training of flight attendants. Although this rule requires that flight attendants receive additional and recurrent training intended to instruct them in the proper use of the AEDs and to familiarize them with the contents of the EMKs, the decision to provide emergency medical care remains with the certificate holder.

By the Aviation Medical Assistance Act of 1998, April 24, 1998 (P.L. 105-170), Congress directed the FAA to evaluate the equipment to be included in Emergency Medical Kits (EMKs) and the training of flight attendants on the use of such equipment; to collect data for one year on in-flight medical emergencies to determine whether AEDs should be required aboard airlines and at airports; and to determine whether regulatory or legislative action is necessary, or issue official notice that action is not necessary. This rule results from the FAA finding that certain regulatory action is necessary.

BACKGROUND

Medical care in-flight and FAA-mandated EMKs have been a topic of interest for many years. In 1986, the FAA adopted a final rule (51 FR 1218) requiring large, passenger-carrying airplanes to carry EMKs. The rule was amended in 1994 (59 FR 52640) to require protective gloves.

Between 1991 and 1999, the FAA's Civil Aeromedical Institute (CAMI) conducted four studies on in-flight medical emergencies and the use of EMKs and reviewed other studies related to in-flight medical emergencies. CAMI also analyzed 1,132 in-flight medical incidents, which occurred from October 1, 1996 to September 30, 1997, on six airlines that accounted for approximately 20 percent of U.S. domestic enplanements for the period. This study identified items, including a non-narcotic oral analgesic, a bronchodilator inhaler and an oral antihistamine for consideration as enhancements to standard medical kits.

The FAA used these CAMI findings in preparing the NPRM evaluation. The FAA also used the 1997 recommendations of an Aerospace Medical Association task force, and of the Medical Panel of the Air Transport Association, which promoted the installation by air carriers of AEDs. The feasibility of these recommendations already had been established by the 1996 approval by the Food and Drug Administration of the use of AEDs on airplanes.

The Aviation Medical Assistance Act, which was enacted April 24, 1998 as Public Law 105-170, 49 USC 44701, charged the FAA with determining whether current minimum

requirements for air carrier crewmember medical emergency training and air carrier emergency medical equipment should be modified. Consequently, the FAA, with the participation of some of the members of the Air Transport Association, collected data on medical emergencies experienced by these members during the period July 1, 1998, through June 30, 1999. Findings drawn from these data also were used in preparing the NPRM evaluation.

Shortly after the close of the NPRM comment period, the October 26, 2000 issue of the New England Journal of Medicine detailed a study of the use of AEDs on 627,956 American Airlines (AA) systems (national plus international) departures (flights) that carried 70,801,874 passengers over the period June 1, 1997 to July 15, 1999. These American Airlines systems flights excluded American Eagle flights. Building on the NPRM evaluation, the FAA used the findings of this study in preparing this final rule evaluation.

The study, *Use of Automated External Defibrillators by a U.S. Airline*, by Richard Page, M.D., *et. al.* , found AEDs to be 100% accurate in identifying candidates for ventricular fibrillation. AEDs were used to shock 13 persons, four of whom had cardiac arrest in the airport. Six persons who received shocks survived at least to discharge from the hospital to which they were admitted following their AED treatment.

Because of comments, updates, clarifications and research findings that followed the issuance of the NPRM, the estimates the FAA produced for this final rule evaluation differ from those for the NPRM. These differences are detailed below in the sections on estimated benefits and costs.

THE BENEFITS ESTIMATE

Assumptions About Voluntary Compliance

The FAA has determined that the extent of voluntary compliance by affected carriers has increased since the NPRM was issued. The carriers known to have initiated voluntary compliance account for about 90% of revenue passenger miles flown by carriers subject to this

final rule. These carriers include all but one of the Major carriers and many of their feeder airlines. Based on this known level of voluntary compliance, the FAA concludes that only the 10% of the total of safety benefits that remain to be produced by this rule are applicable to this analysis of benefits.

This estimate of safety benefits also rests on a further assumption regarding the voluntary activity undertaken by American Airlines and described in the New England Journal of Medicine. The FAA assumes that the remaining 10% of carriers affected by this rule will react as did American Airlines during the study noted above, and will choose to make full and appropriate use of the AEDs they are required to carry. This final rule leaves that choice with each certificate holder.

Estimating Averted Fatalities

As noted above in the Background section, the FAA based its NPRM estimate of safety benefits in part on findings by CAMI and on the recommendations of an Aerospace Medical Association task force, and of the Medical Panel of the Air Transport Association. While the estimates of this final rule are informed by those findings and recommendations, this final rule benefit estimate is more immediately based on the findings of the New England Journal of Medicine study. The FAA believes this study supports an improved estimate of averted fatalities compared to the earlier studies, because it included a greater number of AED-equipped flights.

The study found AEDs to be 100% accurate in identifying candidates for ventricular fibrillation from among 200 passengers who were unconscious, had chest pain or otherwise seemed likely to benefit from AED treatment. Of these 200, 14 persons (including four who had cardiac arrest in the airport) were deemed suitable for treatment that included AED shocking. Because treatment was declined on behalf of one person, AED shocks were administered only to 13 persons. Six of these 13 survived at least to discharge from the hospital to which they were admitted following their AED treatment.

The AED-equipped American Airlines (A.A.) departures totaled to 79.43% of the annual average, 790,535, of all A.A. systems (domestic plus international) departures for the period of the study, which was spread across three years, 1997, 1998 and 1999. Based on this percentage, the FAA estimates that the actual count of six persons saved by the use of the AEDs would increase to become 7.55 (statistical) fatalities averted during an average full year of the study.

To extend the estimate of statistical lives saved upward to other carriers from A.A. alone, and to forecast annual estimates for the period of analysis, the FAA used departures for actual, not average, years. For example, because A.A. accounted for 12.54% of system departures by Major U.S. air carriers during the period of the study, the FAA estimates by proportion that a similar program applied to all 1999 departures by Major U.S. air carriers would result in averting 60.21 (statistical) fatalities.

Based on 1999 departures of the combined carrier categories of Major, National, Large Regional and Medium Regional, the FAA estimates that 77.31 (statistical) fatalities would be averted through the use of AEDs. Because the air carriers in these four categories report their operating and financial statistics to the Department of Transportation on Bureau of Transportation Statistics Form 41, collectively they are known as Form 41 carriers. Together, they account for almost all the revenue passenger miles carried subject to this final rule. However, because some small carriers subject to this rule do not report on Form 41, their operational data are not included in the base of departures and thus the FAA's estimate of statistical fatalities averted is slightly conservative.

Quantifying the Benefits

The FAA uses $2,700,000 as the value of an averted fatality in its benefit-cost analyses. When this value is applied across the expected annual totals of averted fatalities forecast for the span including 2001 through 2010, the amount estimated for the 10% of the industry not yet in compliance is about $176.8 million, discounted at 7% annually to its present (2000) value as prescribed by OMB. Viewed over the ten-year period of analysis, this total converts to uniform annual benefits to the public of about $25.2 million dollars.

The quantitative component of this benefits estimate applies only to estimated benefits from using AEDs to defibrillate passenger/patients. Incidental to this use, AEDs also serve to generate electrocardiographic parameters (EKGs) of passenger/patients. Properly interpreted by a passenger/physician, these EKGs possibly can rule out the necessity for diverting a flight, as otherwise might be determined prudent absent an available, properly interpreted EKG readout. Further, the availability on-board in the enhanced EMK of items that could be properly used by a passenger/physician also could rule out the necessity of diverting a flight. Because flight diversions are costly, their reduction is a benefit. The FAA has made no attempt to quantify the possible benefits of reduction of flight diversions.

Table 1 on the next page shows the quantitative components of the estimate of the safety benefits of this final rule.

Table 1 - EXPECTED SURVIVOR RATE BASED ON NEW ENGLAND JOURNAL OF MEDICINE/AMERICAN AIRLINES STUDY											
American Airlines[1] System Experience Expanded to All Departures of All Form 41[2] Carriers											
Base of Departures		**Estimated Averted (Statistical) Fatalities**									
A.A. System AED Equipped 2 Year Study During 97, 98, 99	A.A. System Annual Average 97, 98, 99	A.A.Experience 627,957 Departures Annual Average 97, 98, 99		A.A. Estimate 790,535 Departures Annual Average 97,98,99		Estimate Extended to Major Air Carriers 1999		Estimate Exctended to All Form 41 Carriers 1999			
627,957	790,535	6.00		7.55		60.21		77.31			
Ten Year Estimate of Annual Averted (Statistical) Fatalities Among All Form 41 Carriers, 2001to 2010											
1999	BASE	2001	2001	2003	2004	2005	2006	2007	2008	2009	2010
77.31	79.73	82.23	84.81	87.46	90.21	93.03	95.95	98.96	102.06	105.26	108.56
Ten Year Estimate of Annual Averted (Statistical) Fatalities Among Carriers Not Now Complying											
		8.2	8.5	8.7	9.0	9.3	9.6	9.9	10.2	10.5	10.9

1. Excludes American Eagle Flights
2. Form 41 Carriers include Major, National, Large Regional and Medium Regional air carriers

THE COSTS ESTIMATES

Three elements drive the overall cost estimate. They are (a) the estimate of the number of affected airplanes; (b) the estimate of the number of affected attendants; and (c) the costs of the items required to implement this rule. The basis on which each element was estimated follows.

Estimating the Number of Affected Airplanes

The FAA estimates the total fleet of airplanes subject to this final rule is 5,045 in 2000. However, as noted above, carriers that have initiated compliance account for about 90% of the revenue passenger miles (RPMs) carried by all part 121 carriers.

By subtracting the fleets of the carriers that are known to have initiated voluntary compliance from the total number of affected airplanes, the FAA estimates that in the base year 2000, there are 1,194 airplanes in the fleets of those carriers that have not initiated voluntary compliance. Carriers operating these 1,194 airplanes will have 36 months after the effective date of this rule to bring them into compliance.

The FAA assumes the base year fleet of 1,194 affected non-compliant airplanes will grow annually in step with the current FAA forecast growth rate of 4.1% for the passenger jet aircraft of all U.S. commercial air carriers over the period of analysis. This rate is derived from the annual forecasts published in the FAA Technical Report, *FAA Aerospace Forecasts, Fiscal Years 2000-2011.* Table 2 shows the annual addition of new airplanes to the base year fleet.

The FAA has not attempted to estimate the effects throughout the fleet of the retirement and replacement of airplanes. For example, while the FAA expects some of the growth in regional jets will come at the expense of the base year complement of turboprop airplanes, the FAA did not attempt to adjust its fleet estimate to reflect this change in the mixture of airplanes.

Estimating the Number of Attendants

Based on Form 41 and other reports filed by carriers, the FAA estimates that in the base year 2000, just over 92,000 attendants are employed by carriers that already have initiated voluntary compliance (note that this does not mean that training has been completed for all these attendants). Similarly, the FAA estimates that almost 25,500 attendants are employed by carriers that are not yet in voluntary compliance. Because carriers have 36 months to bring their staffs into compliance, almost 8,500 attendants will be trained in each of the first three years of the rule in order to accommodate the 25,500 of the base year. These 8,500 will be joined in training by the annually added new hires. While the FAA assumes that new attendants are added annually at 4.1%, in step with fleet growth, the FAA's estimate also reflects the statement of a commenter that new attendants must also be hired and trained because there is a 20% annual employment attrition rate among attendants.

Estimating the Costs of the Items

For this final rule, the FAA examined its NPRM estimates in the light of the comments made to the NPRM. As the result of reviewing, updating and clarifying these comments, the FAA revised its estimates of some components of the costs of AEDs, EMKs and attendant training. As shown in Tables 2, 3 and 4, the FAA keyed these estimates analytically to the base year 2000, totaled all the expected costs over 10-year period of analysis and, as required by the Office of Management and Budget (OMB), computed the present value of the resulting costs using the discount factor of 7 percent annually. Estimates of costs by item follow.

Automatic External Defibrillators (AEDs)

The FAA determined that the average cost of equipping these airplanes with AEDs as required included acquisition, installation, operations and maintenance components, and it estimated the costs for each of these components. The FAA expects the base year (2000) fleet of 1,194 affected non-compliant airplanes will grow annually in step with the current FAA forecast growth rate of 4.1% for the entire U.S. commercial aviation fleet over the period of analysis.

For this final rule, AED costs were reduced by $500 from $3,500, reflecting a statement of discount policy by a major vendor/commenter as well as actual acquisition costs provided by air carriers. This cost did not fall to $3,000 because four hours of labor at $35 per hour for installation (total of $140) was added to the price of each AED, per the advice of a commenter. The average annual operational cost of $157.50 for batteries and pads was provided by the same vendor and applies to a new model that replaced the previous model in May 2000, after the NPRM was issued.

The FAA estimates the total of all costs over the period of analysis of equipping the fleets of those carriers that have not yet initiated compliance is about $5.7 million dollars, when discounted at 7% to its present year 2000 value. Viewed over the ten-year period of analysis, this amount converts to uniform annual costs of about $820,000.

Table 2 on the next page shows how these estimated costs are distributed across the affected fleet over the period of analysis. The FAA assumes one third of the affected fleet will be equipped with AEDs in each one of the three years allowed for compliance by the rule. Thus, in addition to the new airplanes added annually to the base year fleet, 398 existing airplanes will be equipped in each of the first three years.

Table 2- INITIAL AND OPERATING COST OF DEFIBRILLATORS

Period of Analysis		Discount Rate 7%	AED Cost per Airplane	Total Fleet	Annually Added Airplanes	Avg. Annual Battery And Pads Cost	Annual 1/3 Compliance of Base Year Fleet	Annual 1/3 Cost of Base Year Fleet	Annual New Fleet Cost	Total Fleet Battery and Pads Cost	Total Fleet AED Cost	Discounted Total Fleet AED Cost
Year	Year											
BASE	BASE			1194								
2001	First	0.935	$3,140	1243	49	0	398	$1,249,720	$153,860	0	$1,403,580	$1,312,347
2002	Second	0.873	$3,140	1294	51	$157	398	$1,249,720	$160,140	70,718	$1,480,578	$1,292,544
2003	Third	0.816	$3,140	1347	53	$157	398	$1,249,720	$166,420	71,033	$1,487,173	$1,213,533
2004	Fourth	0.763	$3,140	1402	55	$157			$172,700	220,815	$393,515	$300,252
2005	Fifth	0.713	$3,140	1460	58	$157			$182,120	229,950	$412,070	$293,806
2006	Sixth	0.666	$3,140	1519	59	$157			$185,260	239,243	$424,503	$282,719
2007	Seventh	0.623	$3,140	1582	63	$157			$197,820	249,165	$446,985	$278,472
2008	Eighth	0.582	$3,140	1647	65	$157			$204,100	259,403	$463,503	$269,758
2009	Ninth	0.544	$3,140	1714	67	$157			$210,380	269,955	$480,335	$261,302
2010	Tenth	0.508	$3,140	1784	70	$157			$219,800	280,980	$500,780	$254,396
TOTALS											**$7,493,020**	**$5,759,129**

Emergency Medical Kits (EMKs)

This rule requires enhancement of the EMKs already required to be carried onboard the fleet of 5,045 airplanes. Many carriers, notably those that voluntarily have decided to carry AEDs on board, voluntarily have initiated compliance with the EMK enhancement requirements of this final rule. Thus, the FAA estimates that the fleets of those carriers that have not voluntarily initiated enhanced EMK compliance include the same 1,194 airplanes have not voluntarily initiated AED compliance. As it does with AEDs, the rule provides that carriers not already in compliance will have 36 months after the effective date of this rule to comply.

The FAA determined that the total cost of equipping the 1,194 airplanes with enhanced EMKs included acquisition, installation, operations and maintenance components, and it estimated costs for each of these components. Based on the same 4.1% fleet growth rate used for AEDs, the FAA estimates the total of all costs over the period of analysis of equipping the fleets of those carriers that have not yet initiated compliance is almost $1.7 million dollars, when discounted at 7% to its year 2000 value. Viewed over the ten-year period of analysis, this amount converts to uniform annual costs of about $241,000.

Table 3 on the next page shows the FAA assumption that not-yet compliant carriers will take the full 36 months allowed by this rule to equip their base year fleets with enhanced EMKs. Thus, in addition to the new airplanes added annually to the base year fleet, 398 airplanes will be equipped in each of the first three years. Enhanced EMK costs of $514 are greater than the $155 of the NPRM, reflecting changed FAA assumptions. For this final rule, the FAA assumes that the existing EMKs of the base year fleet will require only the enhancement items added by the rule. Thus, in each of the first three program years, 398 existing airplanes will be incrementally equipped at $155 each to bring their existing EMKs up to the new standard. Airplanes newly added to the fleet will be equipped with new, fully enhanced EMKs at $514 each. The FAA assumes the annual upkeep of all kits, whether enhanced from the base of an existing EMK or installed as a new, fully enhanced EMK, is 35% of the $514 cost of a fully enhanced EMK.

Table 3 - INITIAL AND OPERATING COST OF ENHANCED EMKs

Period of Analysis		Discount Rate 7%	Total Annual Fleet	Airplanes Added Annually	Annual 1/3 Compliance of Base Year Fleet	Cost to Enhance EMKs of Existing Fleet	EMK Cost Per New Airplane	Annual EMK Upkeep Per Airplane	Annual Total Fleet Cost	Total Discounted Cost
Year	Year									
2000	BASE	1.000	1194	0	0	0	$0	$0	0	$0
2001	First	0.935	1243	49	398	$155	$514	$0	86,876	$81,229
2002	Second	0.873	1294	51	398	$155	$514	$180	168,319	$146,943
2003	Third	0.816	1347	53	398	$155	$514	$180	160,532	$130,994
2004	Fourth	0.763	1402	55			$514	$180	270,595	$206,464
2005	Fifth	0.713	1460	58			$514	$180	282,032	$201,089
2006	Sixth	0.666	1519	59			$514	$180	292,980	$195,125
2007	Seventh	0.623	1582	63			$514	$180	305,650	$190,420
2008	Eighth	0.582	1647	65			$514	$180	318,012	$185,083
2009	Ninth	0.544	1714	67			$514	$180	330,733	$179,919
2010	Tenth	0.508	1784	70			$514	$180	344,329	$174,919
TOTAL									**$2,560,058**	**$1,692,184**

Training

This final rule requires initial and recurrent training of flight attendants to familiarize them with the contents of the enhanced EMKs and to instruct them in the proper use of AEDs. However, the decision to provide care remains with the certificate holder.

The FAA determined that the total cost of training for the 25,500 attendants employed by the carriers that are not yet in compliance includes the components of initial training and recurrent training (starting at 24 months from the initial training). Each carrier has 36 months from the effective date of this rule to complete initial training of its base year cohort of attendants.

Training also will be provided for new attendants hired because of fleet growth and because of annual attrition replacement of 20%. The annual growth in attendant personnel is assumed to match the growth rate for the fleet. The FAA's estimates assume these costs are piggybacked onto existing training events.

The FAA estimate of costs of initial training for this final rule is partly based on the estimate of a commenter. That estimate provides for two training days at the total cost of $384, including 15 hours of instruction (paid at the rate of 4.0 hours of flight pay (at $28 / hour) for each day of training), one night's lodging at $94 *per* night and $32.40 *per diem* allowance. Considering this commenter's estimate in the light of other updates and clarifications, the FAA's estimated $238.40 for initial training costs, including one day of training, one night's lodging and one day of *per diem* allowance. This is an increase from the FAA's NPRM estimate of $151. Recurrent training is assumed to last one-half day, and to occur at two-year intervals. Table 4 on the next page shows how the estimated costs of these components are distributed across the affected fleet over the period of analysis.

The FAA estimates training costs over the ten-year period of analysis will be about $8.8 million dollars, discounted at 7% annually to its base year value. Viewed over the ten years, this amount converts to uniform annual costs of just under $1.3 million dollars.

Table 4 - INITIAL AND RECURRENT ATTENDANT TRAINING

Period Of Analysis		Discount Rate 7%	Estimated Cost per Attendant	Second Year Recurrent Training Cost	Already Trained	Base Year Training Backlog	3 Year Backlog Reduction	Annual Staff Growth	Backlog Plus Annual Growth	Second Year Recurrent	Total Basic Cadre Cost	Total Cost With Attrition Allowance	Total Discounted Cost
Year	Year				92,156								
2000	BASE	1.000	0	0		25,444	0	0	0	0	0	0	0
2001	First	0.935	$238.40	0			8,481	1,043	$2,270,601	0	2,271,644	$2,725,973	$2,548,785
2002	Second	0.873	$238.40	0			8,481	1,086	$2,280,852	0	2,281,938	$2,738,326	$2,390,559
2003	Third	0.816	$238.40	$119.20			8,481	1,131	$2,291,580	$1,145,790	2,292,711	$2,751,254	$2,245,023
2004	Fourth	0.763	$238.40	$119.20				1,177	$280,597	$140,298	281,774	$338,129	$257,992
2005	Fifth	0.713	$238.40	$119.20				1,225	$292,040	$146,020	293,265	$351,918	$250,918
2006	Sixth	0.666	$238.40	$119.20				1,275	$303,960	$151,980	305,235	$366,282	$243,944
2007	Seventh	0.623	$238.40	$119.20				1,327	$316,357	$158,178	317,684	$381,221	$237,500
2008	Ninth	0.582	$238.40	$119.20				1,381	$329,230	$164,615	330,611	$396,734	$230,899
2009	Tenth	0.544	$238.40	$119.20				1,438	$342,819	$171,410	344,257	$413,109	$224,731
tenth	2010	0.508	$238.40	$119.20				1,497	$356,885	$178,442	358,382	$430,058	$218,470
TOTALS												**$10,893,004**	**$8,848,821**

Fuel Cost of Added Weight Penalty

The additional weight added by this rule will result in added fuel cost. Following the approach of the NPRM, the FAA first estimated that the AEDs and the enhanced EMKs together will add six pounds to each affected airplane. Based on forecasts in FAA Technical Report, *FAA Aerospace Forecasts, Fiscal Years 2000-2011*, the FAA then estimated the added fuel expense for the non-complying 10% of the affected fleet. Over the ten years of the period of analysis including 2001 through 2010, the FAA estimates this rule will impose a fuel weight penalty expense on those carriers not now in voluntary compliance of almost $319,860, discounted at 7% to its present (2000) value. Viewed over the ten-year period of analysis, this value converts to the uniform annual amount of $45,548.

Summary of Added Costs

Table 5 on the next page summarizes the estimated costs of equipping the affected fleet with AEDs and enhanced EMKs, purchasing the additional fuel required by the weight penalty, and training the attendants of the affected carriers not now in voluntary compliance. The estimated total present value of costs over the ten years including 2001 through 2010 that this final rule will bring to those carriers not already in voluntary compliance is about $16.6 million. Viewed over the ten-year period of analysis, the discounted amount converts to uniform annual costs of almost $2.4 million dollars.

Table 5 – Summary of the Expected Costs of the Final Rule		
Cost Items	**Total Cost**	**Present Value**
AEDs	$7,493,020	$5,759,129
EMKs	$2,560,058	$1,692,184
Training	$10,893,004	$8,848,821
Fuel	$ 474,157	$319,860
Grand Total	$21,420,239	$16,619,994

BENEFIT-COST ANALYSIS

As noted, this evaluation focuses on the benefits and costs that this final rule will bring to those carriers not now in voluntary compliance. The 90% of carriers (based on revenue passenger miles) that have initiated voluntary compliance already have committed to the costs and already are generating the benefits from their commitment to this rule. Thus, the estimates of benefits and costs developed in this final rule evaluation are based only on effects of compliance by the remaining 10% of affected carriers.

The FAA expects this rule will result in uniform annual safety benefits of about $25.2 million dollars over the span that includes the years 2001 through 2010. This stream of benefits far exceeds the expected stream of costs of about $2.4 million dollars. Thus, the FAA concludes that this final rule is cost-beneficial.

Final Regulatory Flexibility Determination and Analysis

A. Final Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities (small business and small not-for-profit government jurisdictions) are not unnecessarily and disproportionately burdened by Federal regulations. The RFA, which was amended March 1996, requires regulatory agencies to review rules to determine if they have "a significant economic impact on a substantial number of small entities." The Small Business Administration defines small entities to be those airlines with 1,500 or fewer employees for the air transportation industry.

For this final rule, the small entity group of interest is drawn from among those air carriers that are certificated by the FAA to operate under 14 CFR part 121, and which have 1,500 or fewer employees. The final rule specifically applies to the use by such carriers of airplanes that have maximum payloads of 7,500 pounds and more. Although this rule also encompasses air carriers certificated to operate under 14 CFR part 135, the rule as it regards them includes only a non-substantive editorial change, with no economic impact. Thus for operators certificated under 14 CFR part 135, the economic impact of this final rule on such carriers is negligible.

B. Final Regulatory Flexibility Analysis

Under Section 603(b) of the RFA (as amended), each final regulatory flexibility analysis is required to address these points: (1) reasons why the FAA is considering the final rule, (2) the objectives and legal basis for the final rule, (3) the kind and number of small entities to which the final rule will apply, (4) the projected reporting, recordkeeping, and other rules that may duplicate, overlap, or conflict with the final rule.

1. Reasons why the FAA is considering the final rule

The proximate reason for the FAA's consideration of this rule is the Aviation Medical Assistance Act of 1998 (P.L. 105-170, 49 USC 44701) by which Congress directed the FAA to evaluate the equipment to be included in Emergency Medical Kits and the training of flight attendants on the use of such equipment; to collect data for one year on in-flight medical emergencies for determining whether AEDs should be required aboard airlines and at airports; and to determine whether regulatory or legislative action is necessary or issue official notice that action is not necessary.

2. The Objectives And Legal Basis For The Final Rule

The objective of this final rule is to enhance the capacity of air carriers to enable emergency medical care. Studies by the FAA, and by aviation industry and medical researchers suggest the appropriateness of the availability in airplanes serving part 121 operations of enhanced emergency medical kits (including AEDs) and of concomitant enhanced emergency medical training. This rule will ensure that availability.

The legal basis for the final rule is found in 49 U.S.C. 44701. The Aviation Medical Assistance Act, which was enacted April 24, 1998 [Pub. L. 105-170, 49 USC 44701], the Act directs the FAA to determine whether current minimum requirements for air carrier crewmember medical emergency training and air carrier emergency medical equipment should be modified.

3. The Kind And Number Of Small Entities To Which The Proposed Rule Will Be Applied:

An exhaustive list of small entities subject to this rule was developed as follows:

Step 1. Use of a Comprehensive Database of Airplanes

(a) A list of all U.S. operated civilian airplanes with a maximum structural payload of 7,500 pounds and more was generated through the use of the proprietary Fleet PC™ database provided by Back Associates, Inc. This list included both active and temporarily inactive airplanes. Because this database aggregates all airplane types according to the heaviest example of the type, some few individual airplanes with maximum structural payloads near but under 7,500 pounds were included. They were retained for analysis. Over 1,300 airplanes operated by U.S. commercial operators are excluded with this restriction.

(b) Each listed airplane was matched with its U. S. operator.

(c) All cargo airplanes were eliminated.

Step 2. All major airlines were eliminated.

Step 3. Using information provided by the Regional Airline Association and by the U.S. Securities and Exchange Commission, operators that are subsidiary businesses of larger businesses were eliminated. The financial meaning of subsidiary was used for this step. Thus a subsidiary was defined to be a business owned by another. An example is Continental Express, Inc. which is a subsidiary of Continental Airlines.

Step 4. Using FAA databases, all non-121 operators were eliminated.

Step 5. Using FAA and carrier information, all businesses with more than 1,500 employees were eliminated.

Step 6. Using FAA and carrier information, carriers that were not going concerns were eliminated.

The weight threshold of the category of airplanes with maximum payloads of 7,500 pounds and more matches the seat threshold of 28 and more seats. However, only five of the 6,647 airplanes produced by the operation of Step 1 had only 28 seats and none had 29. Thirty seat airplanes, of which there were 219, better serve to mark the bottom rung of the seat count of the airplanes on the list produced by the six steps. Part 121 operation of all airplanes of this list requires at least one attendant.

The group of small air carriers that resulted from this process is volatile. Within this group, between September, 1998 and September, 2000:

DOT certificated six airlines to start operations;
DOT recertificated a previously dormant airline;
DOT decertificated four airlines, three for dormancy and one for cause; and
three airlines were in Chapter 11 (reorganization) bankruptcy.

For this analysis, all the newly certificated airlines and the re-certificated airline were assumed to be subject to this rule. In August 1999, one of the three bankrupt airlines emerged from the Chapter 11 bankruptcy of its parent company. Because it had not suspended its operations during bankruptcy, because it is a non-subsidiary, and a going concern, and because it reported financial data to the FAA, it is included in this analysis as subject to this rule.

The final list of small carriers subject to this rule totals to 28.[1] With one exception, the economic effects of this rule are based on financial reports for the period 06/98 to 06/99, received from 23 of these 28. The exception is that of a small carrier which reported for the period 03/98 to 03/99. The inclusion of this carrier brought the total of reporting carriers to 24. Annual operating revenues and expenses for three of the start-ups were estimated from partial year data. No financial data were available for four small carriers that are subject to this rule. Of these, two recently began operations. All affected small carriers are identified in Table A, below.

For the 24 small air carriers for which financial data were available, the median initial cost (including acquisition and installation for all airplanes and training for all attendants, is $33,181 (in 2000 dollars). All these costs are assumed to occur in 2001. Thereafter, only minor costs of replenishment and updating of kit contents and of biennial training of attendants will occur.

The arithmetic mean of the first year cost is $43,301, about 1.3 times the median, showing

[1] In December, 2000, one of the small carriers included in this group suspended operations and sought Chapter 11

that the distribution of these carriers by size -- and by consequent rule burden -- includes a few much bigger than the others. In fact, eight carriers had annual operating revenue greater that $100,000,000; for four, it was greater than $200,000,000.

Of the reporting 24 carriers, 17 reported negative net operating income (or the data by which negative net income was estimated) for the previous 12 months. Although two of these 17 are notably well-capitalized startups, it is accurate to state that none of these 17 could have met the initial costs (as defined above) of this final rule from net operating income received (or estimated) during the twelve months ended June 30, 2000.

Based on comments to the NPRM, and updates and clarifications, the FAA estimated equipment costs for each small carrier based on the number of airplanes operated and number of attendants employed. The estimated acquisition and installation cost for each defibrillator is $3,140. The estimated enhancement of an existing EMK is $150. Initial training for each attendant is estimated at $223.70. For this regulatory flexibility analysis, only these initial costs were considered, for the following reasons: (1) they very greatly outweighed the follow-on costs of operations and maintenance; (2) limitations in the available financial data of the carriers, as discussed below; and (3) the short life-spans exhibited by some carriers in this small size category. Costs considered in the final regulatory evaluation, but not in this regulatory flexibility analysis are as follow: (1) annual upkeep of $180 on the EMKs; (2) follow-on training at two year intervals at half the initial amount; and (3) a 20% staff attrition rate, as an additional training expense. All carriers were assumed to acquire only the enhancements at $150 for their existing EMKs, instead of new, fully enhanced EMKs at $514.

Additionally (for this regulatory flexibility analysis but not for the regulatory evaluation), all the initial cost for each small carrier was assumed to be incurred within 2001, rather than over the 36 months the rule allows for compliance. Because a small carrier could accelerate acquisition, installation and training, possibly disadvantageously, this regulatory flexibility analysis ensures analytical sensitivity by making the assumption of accelerated acquisition to show the greatest possible contrast between the carriers' income and rule's cost. Table A on the

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bankruptcy protection. This analysis does not reflect that event.

next page shows the impact of the initial cost of this rule on the 28 small carriers.

Table A

#	AFFECTED SMALL BUSINESS CARRIERS	# PLANES	# ATTENDANTS	TOTAL INITIAL COST $	1% OP. REV. MINUS TOTAL INITIAL COST $	NET OP. INCOME MINUS TOTAL INITIAL COST $
1	PLANET AIRWAYS [1,2]	3	20	14,344	37,696	-148,900
2	SIERRA PACIFIC AIRLINES	2	10	8,817	56,673	556,680[6]
3	SOUTHEAST AIRLINES	2	12	9,264	86,326	390,912[6]
4	SHUTTLE AMERICA CORP. [1,2]	6	40 [3]	28,688	71,562	-9,232,546
5	ALLEGIANT AIR	2	14	9,712	106,468	-5,315,856
6	PAN AMERICAN AIRWAYS CORP. [1]	6[3]	40	28,688	139,152	-12,322,800
7	LEGEND AIRLINES [1,2]	8	53 [3]	38,176	194,584	-40,674,272
8	REEVE ALEUTIAN AIRWAYS	5	12	19,134	274,056	-3,309,308
9	PENINSULA AIRWAYS, INC.[4]	2	5	7,699	384,082	2,639,186[6]
10	EAGLE CANYON	3	20 [3]	14,344	385,909	-2,940,621
11	FALCON AIR EXPRESS	4	76	30,161	503,829	-6,657,144
12	JETBLUE AIRWAYS [1,2]	8	53 [3]	38,176	609,504	-26,714,272
13	OMNI AIR INTERNATIONAL	4	110	37,767	618,893	4,517,800[6]
14	NORTH AMERICAN AIRLINES	4	103	36,201	699,679	2,591,488[6]
15	GULFSTREAM INT'L AIRLINES	2	22	11,501	822,869	-5,302,411
16	MIAMI AIR INTERNATIONAL	7	165	59,941	887,770	-1,798,540
17	CHATAUQUA AIRLINES	24	53	90,816	1,023,304	-2,612,059
18	VANGUARD AIRLINES	12	148	72,588	1,256,292	-17,024,712
19	GREAT LAKES AVIATION	2	25	12,173	1,325,378	8,368,949[6]
20	NATIONAL AIRLINES	12	260	97,642	1,570,998	-38,173,720
21	RYAN INTERNATIONAL AIRLINES	14	140	77,378	1,974,452	2,656,880[6]
22	MIDWAY AIRLINES	29	160	131,202	2,285,738	-6,323,900
23	WORLD AIRWAYS[5]	5	100	38,820	2,521,240	-8,506,100
24	SUN COUNTRY AIRLINES	13	372	125,986	2,564,314	-29,624,468

SOURCES: DOT; FAA; SEC; Carriers; Wall Street Journal, World Aviation Directory
Examined Period Is 06/1999 To 06/2000, Except As Noted
Rule Cost Values Expressed As Actual 2000 Dollars
Carriers' Revenues and Costs Are Actual Values Reported for Period Ended 06/2000, Except As Noted
Initial Costs Includes Acquisition And Installation For All Airplanes, Training For All Attendants

EXCLUDES Four Carriers With No Reported Financial Data For Final 2000 Reporting Period
EXCLUDES Two Carriers In Chapter 11 Bankruptcy With Suspended Ops. During The Examined Period
EXCLUDES Four Carriers Decertificated By FAA During Or After the Examined Period

1: Start-Ups; DOT Certificates Issued 08/98 through 07/00
2. Financial Data Estimated From Partial Years
3. Estimated
4. Annual Financial Data Based On Year Ended 03/00
5. Emerged From Chapter 11 Bankruptcy Of Former Parent
6. Positive Net Operating Income Not Changed By Initial Cost

Thus, the proposed rule applies to 28 small air carriers operating under part 121 which use airplanes that have maximum payloads of 7,500 pounds and more, and for which certificated operation requires at least one flight attendant. All of the 28 are classified in either codes 481111 (Scheduled Passenger Air Transportation) or 481211 (Nonscheduled Chartered Passenger Air Transportation) of the North American Industry Classification System, as published in the Volume 65, Number 172 of the Federal Register (September 5, 2000). The small business size threshold for both these codes is 1,500 employees. All of the 28 have fewer than 1,500 employees, and while some have operational or code-sharing agreements with other businesses, none is owned by another business.

As noted above, four of the 28 made no financial report of their operations to the Department of Transportation for the final reporting period ending June 30, 2000. Taking the remaining 24 as representative of all 28, these carriers range from $5.2 million to $269.0 million in annual revenue from operations. Eight earned over $100 million. Of these, four earned over $200 million. Seventeen had negative net income for the year ended June 30, 2000. Of these seventeen, five are start-ups, two of which are notably well capitalized. Only seven of the reporting carriers had positive net operating income for the twelve months ended June 30, 2000.

4. The Projected Reporting, Recordkeeping, And Other Compliance Requirements Of The Proposed Rule:

The FAA expects no more than minimal new reporting and recordkeeping compliance requirements will result from this rule. The principal vendors of the EMKs provide "auto-update(ing)" and "content tracking/notification services." These services eliminate the need for the carriers themselves to track expiration dates and replenish EMK contents, while maintaining the sales relationship of the vendor to the carrier.

Additional reporting and recordkeeping for training also will be no more than minimal because, under 14 CFR 125.289, certificate holders already must determine "by appropriate initial and recurrent testing that [each flight attendant] is knowledgeable and competent" in a number of characteristic duties and responsibilities, specifically including the operation of

emergency equipment.

5. All Federal Rules That May Duplicate, Overlap, Or Conflict With The Proposed Rule

The FAA is not aware of any federal rules that either duplicate, overlap, or conflict with the proposed rule.

6. Other Considerations:

(a) Business Closure Analysis

As noted above, the category of air carriers defined by the requirements of this rule is volatile. Just before and just after the examined period, from June 1998 to September 2000, the FAA decertified four such airlines, three were in Chapter 11 bankruptcy, and seven entered or re-entered the business. Seventeen of the 24 small air carriers that are subject to this rule and for which financial information was reported had negative net operating income – without the rule. On the other hand, as Table 1 shows, in every case, the expected initial cost (acquisition, installation and initial training) is markedly less than one percent of operating revenue.

The difference between one percent of operating income and first year costs ranges from $33,140 to $2,502,960. The median difference is $598,434 and the arithmetic mean is $ 833,230, again showing the marked size difference among the 24 reporting carriers. Considering the volatility of this group of carriers, and the positive difference found in each case between one percent of operating income and the highest year cost of this rule, the FAA cannot conclude that the cost of this rule will be "the last straw," immediately responsible for any of the total of 28 affected businesses closing.

(b) Disproportionality Analysis

The cost of this rule varies in direct proportion to the number of airplanes and attendants. Thus, major air carriers, with hundreds of airplanes in their fleets, and small carriers, such as the

28 identified, will be affected in the same proportion as all airlines. Two other factors were considered regarding whether small entities bear a disproportionate impact.

First, all of the major airlines, except one, have entered into agreements to purchase defibrillators. Any airline purchasing an emergency medical kit with a defibrillator now, or after the rule is enacted will incur a disproportionate current expense relative to major airlines.

The presence or absence of volume discounts can be considered an indicator of disproportional effect by size. In this case, most of the major airlines already have acquired or have entered into agreements to acquire the equipment and training required by this rule. The FAA was unable to validate that majors received a uniform allowance of discounts based on volume. In response to an FAA request for clarification of this point, a sales manager for one of the two major vendors of the defibrillators stated that discounts have been given on as small a purchase as one unit. The sales manager went on to describe her concept of discounting as including the tactic of sweetening the deal for early adopters, independent of their size. Quantity discounts and early adopter discounts could favor the majors that have large fleets and were early adopters. The FAA was unable to validate whether the pricing of these units have disproportionately favored larger firms.

(c) Affordability Analysis

As noted, the initial cost (acquisition and installation for all affected airplanes and training for all attendants) is less than 1% of annual operating revenue for all of the 24 reporting small carriers. However, because 17 of these 24 had negative net income for the year June 1999 to June 2000, only seven of the 24 reporting could "afford" on the basis of net income, to comply with this rule. Both of these measures provide a wide range of affordability. Airlines generate high revenue and cash flow while the industry as a whole historically reports little or no profits. On a simplest of measures, the initial cost of the rule is in the thousands of dollars per airplane, well below the revenue of a single day generated by one airplane. The FAA concludes that the rule is affordable for all affected airlines.

(e) Competitiveness Analysis

Given the small relative burden of this rule, it is unlikely to cause a change in pricing or market share which will favor larger firms. The airline industry can be characterized by being dominated by ten major airlines operating through hub airlines. The exception is Southwest who while operating on a point-to-point route structure, rarely offers service to cities smaller than Boise, Idaho. Smaller carriers typically operate in niche markets often with leisure destinations. In such markets the small burden of emergency medical kits is unlikely to change the competitive positions or strategies of the firms. In fact, it can be argued that emergency medical kits with defibrillators is an advantage in leisure markets. Aloha Airlines is committed to providing this service for its Hawaii routes. For markets with leisure destination, carriers can offer low-cost service by operating lower-cost-per-seat larger jet airplanes, rather than smaller turboprop commuter airplanes. In fact, seven of the small carriers operate 727s, two others operate 737s and two others operate DC-9s. It should be noted that the requirements for efficient operation of these airplanes are comparable to the same requirements as for the major airlines.

(a) Consideration Of Lower Impact Alternatives

Alternative One

The "baseline," "do nothing," or *status quo* alternative reduces the cost to zero, but will not accomplish the requirements of the Aviation Medical Assistance Act. As it stands, this rule is the reasoned result of the FAA Administrator carrying out the requirements of the Act. The FAA rejected this alternative, because the rule as enacted will be in compliance with the Act.

Alternative Two

Alternative Two, which would apply the rule only to air carriers operating flights that require two or more flight attendants was suggested by the comments of Continental Express and the Regional Airline Association (RAA). In contrast to Alternative One, Alternative Two cannot be ruled out as not being a reasonable result of the Administrator's compliance with the Act. However, the FAA rejects this alternative because it trades off a small benefit to only a few of the affected small air carriers for a large decrease in the coverage of this rule.

14 CFR part 121 requires two flight attendants for the operation of an airplane with 51 or more offered seats. However, because 21 of the 28 small carriers currently operate airplanes that offer 51 or more seats -- thus requiring at least two attendants -- the overall impact on the small carriers would change little. However, while 7 of the 28 small carriers would be exempt from the rule, the exemption would also apply to the fleets of non-small businesses carriers.

Examination of the membership of the Regional Airline Association (RAA) suggests the effect of Alternative Two on non-small businesses. Twenty-eight of the 185 members of the RAA operate airplanes affected by this rule. In fact, 9 of these 28 also are included among the 28 small air carriers affected by this rule. The 19 remaining affected RAA members are not included, either because they have more than 1,500 employees or because they are owned by other businesses.

Table B on the next page shows how Alternative Two would apply to affected members of the RAA, including both large and small businesses.

RAA MEMBERS PROVIDING PASSENGER SERVICE IN AIRPLANES WITH MAXIMUM PAYLOADS OF 7,500 POUNDS AND MORE

#	CARRIER NAME	SUBSIDIARY OF	DBA AS	TOTAL AFFECTED FLEET	AFFECTED FLEET WITH 51 AND MORE SEATS [2]
1	Air Wisconsin Airlines Corp.		United Exp(ress)	44	0
2	Allegheny Airlines, Inc.	US Airways Group, Inc	US Airways Exp.	47	0
3	Aloha Islandair, Inc.	Aloha Air Group, Inc.	Islandair	5	0
4	American Eagle Airlines, Inc.	AMR Corp.		207	26[3]
5	Atlantic Coast Airlines, Inc.		Delta Connection/United Exp.	23	0
6	Atlantic Southeast Airlines, Inc.	Delta Air Lines, Inc.	Delta Connection	91	12[3]
7	Business Express Airlines, Inc.	AMR Corp.	American Eagle	40	0
8	CCAIR, Inc.	Mesa Air Group, Inc.	US Airways Exp.	10	0
9	**Chautauqua Airlines, Inc.**[1]		Trans World Exp./US Airways Exp.	29	0
10	Comair, Inc.	Delta Air Lines, Inc.	Comair Airlines/Delta Connection	109	0
11	Continental Express, Inc.	Continental Airlines, Inc.		124	2
12	**Eagle Canyon Airlines, Inc.**[1]		Scenic Airlines	5	0
13	Era Aviation, Inc.	Rowan Companies	Alaska Airlines Partnership Carrier	7	0
14	Executive Airlines, Inc.	AMR Corp.	American Eagle	29	17[3]
15	Express Airlines I, Inc.	Northwest Airlines Corp.		31	0
16	**Great Lakes Aviation, Inc.**[1]		Great Lakes Airlines/United Exp.	8	0
17	**Gulfstream Internat''l Airlines, Inc.**[1]		Continental Connection/Trans World Exp.	4	0
18	Horizon Air Industries, Inc.	Alaska Air Group, Inc.	Alaska Airlines Commuter/Horizon Air	60	20[3]
19	Mesa Airlines, Inc.	Mesa Air Group, Inc.	America West Exp./US Airways Exp.	43	0
20	Mesaba Aviation, Inc.		Mesaba Airlines/Northwest Airlink	102	29[3]
21	**Midway Airlines Corporation** [1]			26	8
22	**Peninsula Airways, Inc.** [1]		Alaska Airlines Partnership Carrier/PenAir	2	0
23	Piedmont Airlines, Inc.	US Airways Group, Inc.	US Airways Exp.	57	0
24	PSA Airlines, Inc.	US Airways Group, Inc.	US Airways Exp.	25	0
25	**Shuttle America Corp.**[1]			6	0
26	**SkyWest Airlines, Inc.**[1]		Delta Connection/United Exp.	103	0

Table B shows that reducing the cost burden on small carriers by means of Alternative Two would greatly reduce the availability of emergency medical care to the public but only minimally reduce costs for the small carriers. In rejecting Alternative Two, the FAA's chooses to maximize public benefits, rather than to minimize private costs.

Alternative Three

Congress directed the FAA through the Aviation Medical Assistance Act of 1998 to evaluate the equipment to be included in Emergency Medical Kits and the training of flight attendants on the use of such equipment; to collect data for 1 year on in-flight medical emergencies for determining whether AEDs should be required aboard airlines and at airports; and to determine whether regulatory or legislative action is necessary or issue official notice that action is not necessary. Studies by the FAA, and by aviation industry and medical researchers suggest the appropriateness of the availability in airplanes serving part 121 operations of enhanced emergency medical kits and of concomitant enhanced emergency medical training. In response to Congress and to the information provided by the studies the FAA decided that the best approach is this rule providing enhanced emergency medical kits to all part 121 operations with at least one flight attendant.

(f) Key Assumptions

Apart from the common analytical ground rules dealing with the establishment of base year dollars (2000) and the period of analysis (06/99 to 06/00, except as noted), the key assumptions of this analysis are as follow:

(1) All of each affected small carrier's attendants will receive the training required by this rule. It is possible that some attendants of some carriers could work only on non-affected airplanes -- those with maximum payloads less than 7,500 pounds. This analysis assumes all will receive training as though they all worked on

affected airplanes.

(2) All affected small carriers will incur all initial cost during the first year (2001) the rule is in effect. In fact, this rule allows carriers to take as much as 36 months to effect compliance. The assumption that these carriers will incur all initial cost during the first year is made for this analysis in order to demonstrate the "worst case" financial burden. As noted above, in no case was this burden greater than 1% of any carrier's annual operating revenue.

(3) Conclusions about the 28 small entities are based on financial reports filed by 24. In three cases, annual data were estimated from partial years. This assumption is consistent with the data limitations, and it is reasonable. While two of the non-reporting carriers conform to the big, old airplane paradigm and two operate airplanes designed for commuter operations, each has characteristics of those that did report.

INTERNATIONAL TRADE IMPACT ASSESSMENT

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and where appropriate, that they be the basis for U.S. standards. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

In accordance with the above statute and policy, the FAA has assessed the potential effect of this final rule and has determined that it will have little or no effect on

trade-sensitive activities. U.S. carriers that have voluntarily upgraded their emergency medical equipment account for a majority of the U.S.-flag international service. The FAA believes that the popularity among U.S. carriers of the provisions of this rule extends to foreign carriers in international flights to and from the United States, and that the broad extent of this popularity strongly suggests this rule will not disadvantage U.S. carriers flying internationally. The FAA is aware that many foreign carriers carry AEDs on flights to and from the United States. Among those of which the FAA is aware are the following: Aegean Airlines; Air Canada; Air Zimbabwe; British Airways; Cathay Pacific; Emirates Airlines; Finnair; Iberia; Malev; Quantas; Swiss Air; Varig; and Virgin Atlantic. This list bears out the widespread popularity of the provisions of this rule.

FINAL UNFUNDED MANDATES ASSESSMENT

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a final "significant intergovernmental mandate. A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory rules. Because this final rule does not include have a private sector mandate with a potential cost impact of more than $100 million annually, the

analytical requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.